

## ABSTRACT

A network system providing secure service facility with central control & management equipment to enable unified key management is disclosed. The network includes a plurality of switching equipment and central control & management equipment, each of which includes encryption section. Encryption section of central management & control equipment encrypts; (a) a public key of switching equipment of a called party (i.e. terminating switching equipment); and, (b) a common key for encrypting message to be transferred between switching equipment. This is carried out each time a call requesting secure communication is originated. Then, the encrypted keys are delivered to the switching equipment of a calling party (i.e. originating switching equipment). Central management & control equipment maintains public keys of any switching equipment in a database. Central management & control equipment, having received from the originating switching equipment a called dial number and a user identification number of the originating switching equipment, retrieves the database to find a public key of the terminating switching equipment. A common key is then generated in central management & control equipment using the retrieved public keys of both the terminating switching equipment and the originating switching equipment.